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The Butterflies of the West Indies and South Florida.—David Spencer Smith, Lee D. Miller and Jacqueline Y. Miller. 1994. Oxford University Press, Oxford, New York, Tokyo. 264 pp. and 33 plates. \$125.00 (cloth).

This is an authoritative guide to the 350 or so butterfly species occurring in the Greater and Lesser Antilles, Bahamas, and subtropical Florida, designed to replace Riley's (1975) field guide to the same region. The large format book gives detailed descriptions and accounts of life histories and distributions for all known species from the region, including nearly 60 new taxa described in the last twenty years. Almost all species and many differentiated subspecies from different islands are illustrated in detailed, life-sized color paintings by Richard Lewington (a few swallowtails are reduced). A taxonomic checklist, an extensive bibliography, and a good index are included. Plates and text are clearly laid out and conveniently cross-referenced to one another. Although the size of the book and its lack of island-specific faunal lists will make it somewhat less useful in the field than Riley (1975), it will provide an excellent guide to anyone wishing to curate a collection of butterflies from the West Indies. Although it contains no keys, the clear text descriptions and plates make species identification straightforward. In short, the book is intelligently organized and straightforward to use, in contrast to some other butterfly guides of recent years.

The 24 page introduction begins with an overview of the regional butterfly fauna in context of Nearctic and Neotropical faunas to the north, south and west. Trinidad and Tobago are excluded from coverage in the book, because of their close proximity to Venezuela, and their essentially continental (and much more diverse) assemblage of taxa. Next is a short review of historical biogeography and paleontology of butterflies, and a discussion of the complex and controversial tectonic and biogeographical history of the Caribbean region. An effort is maintained throughout the book to speculate on biogeographic origins of island taxa, some (e.g., *Hypolimnas misippus*) suggested to have dispersed very recently along various corridors, others (e.g., *Calisto* species) thought to have remained sedentary and diverged in situ after isolation by Tertiary vicariant events. A discussion of equilibrium island biogeography and size of island faunas (MacArthur and Wilson, 1967) leads into a section on conservation and extinction. This closes somewhat incongruously with a call to continue building museum collections with specimens of rare and little known taxa. A section on the history of collecting in the various islands in the style of Brown and Heineman (1972) is detailed and carefully researched, with interesting anecdotes about several early natural historians.

Individual species accounts are broken down into five sections. The description gives identifying characters for adult specimens. Range lists the entire distribution of each species (by island or country), and includes type localities. Natural history describes immature characters, food plants and habitat, when known. Most life history information is derived from published sources, and careful citations are provided. Characters and distributions of subspecies are described. Discussion of taxonomic associations, biogeography and intraspecific differentiation is presented at the end of many species descriptions.

I find the absence of any phylogenetic perspective in the book a bit disappointing. The checklist layout could easily have followed a clear hierarchical scheme, but the list of taxa is only explicitly ranked at the family and genus levels. Phylogenetic arrangement of closely-related taxa could provide insight to biogeographical patterns. More importantly, the choice of family-level groups is archaic, although it follows historical precedent (e.g., Riley, 1975; Miller and Brown, 1981). The authors' recognition of families like Riodinidae and Satyridae leaves paraphyletic sister assemblages (Lycaenidae and Nymphalidae, respectively). Harvey's (1991) broadly accepted classification includes such groups as the heliconiines and satyrines within a single large Nymphalidae. The danaines and ithomiines are now considered sister tribes within a single nymphalid subfamily by R. I. Vane-Wright (pers. comm.).

Many of the new species and subspecies added to the region's fauna since Riley (1975) are very similar to previously recognized taxa. Most of them are known from relatively few specimens taken at single localities, often on a single expedition. Life histories of these taxa are rarely described, and diagnoses are often based on wing pattern characters. Intraspecific phenological variation in wing patterns, which may be dramatic in satyrines (e.g., Brakefield and Larsen, 1984; Brunton et al., 1991), could account for the relatively minor differences among some of the *Calisto* species described by Schwartz and Gali (1984) and Gonzalez (1987). Even if these taxa are distinct, the casual butterfly collector is unlikely to encounter them, given their apparently local endemism and rarity.

A final question to consider is, do we really need another book on Antillean butterflies? The authors state that their intention at the beginning of the project was simply to revise and expand Riley's book, following the example of Eliot's (1992) revision of Corbet and Pendlebury's "Butterflies of the Malay Peninsula," but I am unconvinced that our knowledge of the Caribbean fauna has changed so significantly that a big, expensive treatment was necessary. Other regions of the neotropics are sorely lacking guides that provide more than photographs of specimens in the Natural History Museum (London). It would be a greater service to science and butterfly appreciation to produce a book of similar scope on the butterflies of Ecuador or Peru. Nevertheless, taken on its own terms, *The Butterflies of the West Indies and South Florida* is a successful and comprehensive treatment that demonstrates the maturity of our understanding of the region's fauna, at least at the level of museum collections.—Andrew V. Z. Brower, Dept. of Entomology, American Museum of Natural History, Central Park West at 79th St., NY, NY 10024.

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